

REMARKS/ARGUMENTS

Process claims 15-18 are cancelled. Claim 1 is amended. Support for the amendments can be found at, for example, paragraphs 0003, 0041, 0046, 0051, and 0075 of the published specification. No new matter is added. Entry of the above amendments is respectfully requested. Upon entry of the above amendments, claims 1-14 are pending. Reconsideration of the present application is respectfully solicited in view of the above amendments and the following remarks.

Claims are allowable under 35 U.S.C. § 103(a)

Previously presented claims 1-14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sandstrom (US Patent Application Publication No. 2003/0089438) in view of Vasseur I (WO 02/088238). *See* pages 2 and 3 of the Office Action.

Specifically, the Examiner states that the primary reference Sandstrom, which recites a tire tread made of a rubber composition, teaches every limitation of the previously submitted claim 1 of the present application except for the use of unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol as a plasticizing agent. According to the Examiner, Vasseur I, suggests the grip performance of the tire tread is conserved over time when unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol is used in the rubber composition of tire tread. Therefore, the Examiner concludes that it would have been obvious for a person of ordinary skill in the art to use an unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol disclosed in Vasseur I as a plasticizing agent in Sandstrom's tire tread composition to improve the grip performance of Sandstrom's tire.

For reasons set forth below, amended claim 1 is not obvious under 35 U.S.C. §103(a) over Sandstrom in view of Vasseur I.

First, the rejection of previously submitted claim 1 is not applicable to the presently pending claim 1, which is now directed to a passenger car tire. Sandstrom is directed to “large pneumatic tires for various agricultural vehicles, such as for example tractors.” See paragraph 0002 and Fig. 2. (Emphasis added.) Therefore, even if one would modify the composition of Sandstrom’s agricultural vehicle tire based on the teachings of Vasseur I, as proposed by the Examiner, this person would arrive at only an agricultural vehicle tire at most, rather than a passenger car tire as recited in the presently pending claim 1. On page 5, last paragraph of the Office Action, the Examiner noted that “the instant claims are not limited to a particular type of tire.” That is no longer so.

Second, even if a person of ordinary skill in the art were to add unsaturated ($C_{12}-C_{22}$) fatty acid triester of glycerol as taught in Vasseur I to Sandstrom’s tire tread composition, as suggested by the Examiner, s/he would still not obtain a passenger care tire comprising silica in an amount of greater than 50 phr, as recited in amended claim 1. Sandstrom discloses the use of conventional carbon black in the amount of 40 to 50 phr, as shown in Tables 1-3, and a very small amount of silica (5 or 10 phr in samples H and I in Table 3). Nowhere does Sandstrom teach, suggest, or disclose the use of silica in an amount of greater than 50 phr as an inorganic reinforcing filler, let alone recognize the criticality or advantages of the use of silica in distinction from carbon black, as explained at, for example, paragraphs 0044, 0052, and 0053 of the published specification. See MPEP 2143.03 (To establish a *prima facie* case of obviousness, all claim limitations must be taught or suggested.)

The Examiner argues that Sandstrom discloses at paragraph 0035 that carbon black and silica are substantially equivalent reinforcing fillers and, therefore, it would have been obvious for a person of ordinary skill in the art to replace the carbon black in the amount of 50 phr in the

compositions exemplified in Tables 1-3 with the same amount of silica. *See* page 2, last paragraph of the Office Action. Assuming that the Examiner is correct that Sandstrom discloses that carbon black and silica “are substantially equivalent reinforcing fillers”, a person of ordinary skill in the art would reasonably expect that silica and carbon black are interchangeable to each other and neither is superior to the other. However, as explained in detail at, for example, paragraphs 0044, 0052, 0053 of the published specification of the present application, a high amount of silica is able to provide a tire with low hysteresis (reduced rolling resistance) and high grip on wet, snow-covered or icy ground; whereas a high amount of carbon black will adversely affect these desired properties. These benefits of using silica, as compared to using carbon black, would be unexpected to a person of ordinary skill in the art with the knowledge based on Sandstrom, as proposed by the Examiner. The unexpected results would further support that claim 1 is not obvious over the art of record under 35 U.S.C. §103(a).

Third, there is no apparent reason for a person of ordinary skill in the art to apply the teachings of Vasseur I to the tire composition of Sandstrom to arrive at the present invention. *See, KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Sandstrom is directed to “large pneumatic tires for various **agricultural vehicles**, such as for example tractors.” *See* paragraph 0002 and Fig. 2. (Emphasis added.) At paragraphs 0003-0006, Sandstrom explains the following:

[0003] Such tire treads generally contain significantly raised lugs which are designed to be ground engaging.

[0004] **It can readily be seen that such tractor tires, with lugs designed to be ground engaging, present only a small portion of the tread to the ground**, at least insofar as the surface of the lugs themselves are concerned as compared to typical passenger tire treads.

[0005] Accordingly, **such tractor tires rely more on the weight of the associated tractor to provide tire tread traction over the ground than passenger tires**.

[0006] Also, it can be readily visualized that shocks originating by the tire traveling over irregularities of the ground are readily transmitted to the wheel, and hence to the axle, of the associated vehicle and thereby to transmit the associated shock to the vehicle which, in turn, can result in a discomfort to the individual driving the vehicle.

[0007] In such circumstance, such agricultural vehicles typically rely upon the shock absorbency of the raised lug configuration of the tire tread to provide a degree of shock absorbency for the comfort of vehicle operator.

[0008] Accordingly, it remains desirable, in many circumstances, to increase the shock absorbency for such vehicles having a tread of such spaced apart, raised lug configuration.

(Emphasis added.)

It is apparent from the above description that Sandstrom is directed to agricultural vehicles, which are intended to run at a low speed on soft farm grounds. Nowhere does Sandstrom suggest or even imply that there is a need to increase the tire's ability to grip on wet ground. Indeed, a person of ordinary skill in the art would not consider the grip ability of Sandstrom's tires on wet ground, considering the irregularity of the ground, low travel speed, heavy weight of the vehicles, etc.

Vasseur I is directed to tires of a passenger vehicle, which is apparently designed for running on roads at a very high speed. *See* paragraph 0002. There is a need to improve the grip of tires of a passenger vehicle on dry or damp ground. *See* paragraph 0005.

A person of ordinary skill in the art would not add unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol to Sandstrom's tire tread composition, based on Vasseur I, which is directed to a light passenger vehicle running on roads at a high speed, to improve the grip of Sandstrom's tire, which is directed for a heavy agriculture vehicle running on loose and irregular ground at a low speed.

The Examiner argues, "many agricultural vehicles commonly drive, for short distances, on roadways, as such would reasonably be concerned with grip on both off-road and road

surfaces.” See page 5, last paragraph of the Office Action. However, it is well known that these agricultural vehicles are driven at a much lower speed, even on the road, compared to passenger cars. An agricultural vehicle disclosed in Sandstrom, which runs on a low speed, does not have the same concern or demand for a high grip ability, as does a light passenger car in Vasseur I, which runs at a high speed. The use of an agricultural vehicle on roadways is merely coincidental and not its intended purpose. Consequently, the tire for such a vehicle is not designed with a roadway in mind. Therefore, neither Sandstrom nor Vasseur provides any apparent reason to further improve the grip ability of Sandstrom’s agricultural vehicle. It is particular so considering Sandstrom’s repeated emphasis that the heavy agricultural vehicles taught therein “rely more on the weight of the associated tractor to provide tire tread traction over the ground than passenger tires” and that “such tractor tires, with lugs designed to be ground engaging, present only small portion of the tread to the ground.”

Fourth, a person of ordinary skill in the art would have no reasonable expectation of success for a modification of Sandstrom’s agricultural vehicles based on Vasseur I’s teachings, as proposed by the Examiner. As noted above, Sandstrom emphasizes the importance of the shock absorbency of agricultural vehicles obtained through a tread of spaced apart, raised lug configuration. Sandstrom also discloses that the agricultural vehicles with lugs designed to be ground engaging, “present only small portion of the tread to the ground.” Therefore, even if a person of ordinary skill in the art would be motivated to modify the tire tread of Sandstrom based on Vasseur I, as suggested by the Examiner, s/he would not reasonably expect that the grip ability of a so modified tire would be satisfactorily improved, considering that “only a small portion” of the tread is engaged with the ground. Nor would s/he reasonably expect that the modification of Sandstrom’s tire tread, as proposed by the Examiner, would not adversely affect

or interfere with the critical "shock absorbency" ability of Sandstrom's agricultural vehicle tire tread.

Fifth, the unexpected results as shown at paragraphs 0122-0140 further indicate that the invention as described in claim 1 of the present application is not obvious over Sandstrom in view of Vasseur I. *See* MPEP 716.02(a) (III) ("Presence of an unexpected property is evidence of nonobviousness.") As explained at, e.g., paragraph 0006 of the present published application, the grip of the tire as described in claim 1 on wet ground is significantly increased. This unexpected result is further demonstrated by the comparative test results described at paragraphs 0122-0140 of the present published application.

In the comparative tests, the control composition C-1 comprises two known SBR and BR diene elastomers, and is conventionally used in what are called "green" tires of low energy consumption. The composition according to the present invention C-2 comprises 50 phr of butyl rubber with which are associated 50 phr of an SBR of the same structure as C-1 (but devoid of aromatic oil), and also a glycerol fatty acid triester (sunflower oil having a high content of oleic acid). In these comparative examples, compositions C-1 and C-2 are used as treads of radial-carcass tires for passenger-vehicles, referred to respectively as P-1 (control tires) and P-2 (tires according to the invention). It was noted that under the same braking test conditions, the braking distance of the P-2 tires (i.e. according to the present invention) on wet road was unexpectedly reduced by as much as 26% compared to the braking distance of the control tires P-1.

The Examiner argues that the above comparative data referred to in Applicants' previously submitted Amendment does not present a large enough trend to differentiate an unexpected result from a predictable result. However, the Examiner does not provide any reason, explanation, or evidence supporting his assertion. Applicants believe that it is indeed

unexpected and significant that the braking distance of the tires made in accordance with the present invention can be reduced by 26% over the prior art. Applicants reserve the right to provide further evidence in this regard, if the Examiner maintains the rejection of any of the presently pending claims after considering the above amendments and remarks.

Based on the foregoing, it is clear that claim 1 is not obvious over Sandstrom in view of Vasseur I under 35 U.S.C. § 103 (a). For at least the same reasons, claims 2-14, each of which depends from claim 1, are also not obvious over Sandstrom in view of Vasseur I under 35 U.S.C. § 103(a). Withdrawal of the rejections of claims 1-14 is, therefore, respectfully requested.

Previously presented process claims 15 and 18 are rejected under 35 U.S.C. § 103 (a) in view of several references. These rejections are moot because claims 15 and 18 have been cancelled, without prejudice.

Applicants believe that the present application is in condition for allowance. Early and favorable consideration is earnestly requested.

It is believed that no other fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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